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By:

PATENT

Attorney Docket No.: 18941H-002911US
Client Ref. No.: B98-006-2

On 13 Aug. 2007By: Malinda C. Wajit

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

GOODMAN et al.

Application No.: 10/826,812

Filed: April 16, 2004

For: ROBO: A NOVEL FAMILY OF
POLYPEPTIDES AND NUCLEIC
ACIDS

Customer No.: 20350

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Confirmation No. 1573

Examiner: Olga N. Chernyshev, Ph.D.

Technology Center/Art Unit: 1649

DECLARATION UNDER 37 C.F.R. §
1.131

We, Corey S. Goodman, Thomas Kidd, Kevin J. Mitchell, and Guy Tear were at the time of the invention employed by the Regents of the University of California, the assignee of the above-referenced patent application.

We are the co-inventors of the subject matter described and claimed therein.

We conceived of and reduced to practice the claimed invention in the United States prior to October 10, 1997. Attached Exhibit A provides evidence of the conception of the invention and its reduction to practice. The experiments described in Exhibit A were performed prior to October 10, 1997. This work was done by us, or under our supervision.

Exhibit A, with dates redacted therefrom, is a printout of laboratory records showing the amino acid sequence of human Robo-1. The raw sequence file data were saved to an optical disk. The pages in Exhibit A show a computer analysis of sequence data comparing

PATENT

Appl. No. 10/826,812
Thomas Kidd, Ph.D.
Declaration under 37 C.F.R. § 1.131

the human Robo-1 (H-Robo1 pep) sequence to those of other Robo proteins. The amino acid sequence was determined based on nucleic acid sequence. H-Robo1 pep includes the extracellular domain (five immunoglobulin domains and three fibronectin domains). Amino acids 68-167 of H-Robo1 pep are the first immunoglobulin domain and correspond to amino acids 68-167 of SEQ ID NO:8 in the application.

In view of the foregoing, we respectfully submit that the evidence provided in Exhibit A unequivocally establishes that the basic inventive concept of the claimed invention was conceived of and reduced to practice prior to October 10, 1997.

We further declare that all statements made herein of our knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that any such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: _____

Corey S. Goodman

Dated: 8/13/07

Tom Kidd
Thomas Kidd

Dated: _____

Kevin J. Mitchell

Dated: _____

Guy Tear

Exhibit A

Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

Page 1

		M X - - H - - X L X X X - - S X T X N H - - - - - I P Majority																				
		10										20										
1		M	H	P	M	H	P	E	N	H	A	I	A	R	S	T	S	T	N	N	-	-
1		M	K	W	K	H	V	P	F	L	V	M	I	S	L	L	S	L	S	P	N	H
1		G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1		M	Y	-	-	-	-	-	-	Y	L	G	F	Y	H	-	T	H	T	H	T	I
		X X S X X - R - - - - - N - L - - - - Majority																				
		40										50										
22		S	R	S	R	S	S	R	M	W	L	L	P	A	W	L	L	V	L	V	A	S
30		D	P	E	D	V	E	R	G	N	D	H	G	T	P	I	P	T	S	D	N	D
2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24		N	A	S	N	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		- - R - - - X X P R I I E H P X D L V V S K G E P A T L N C Majority																				
		70										80										
48		A	V	R	G	Q	Y	Q	S	P	R	I	I	E	H	P	T	D	L	V	V	K
60		R	L	R	Q	E	D	F	P	P	R	I	V	E	H	P	S	D	L	I	V	S
2		-	-	-	-	-	-	-	-	E	N	P	R	I	I	E	H	P	M	D	T	T
29		-	-	-	-	-	-	-	-	A	P	V	I	I	E	H	P	I	D	V	V	S
		K A E G X P T P T I E W F K D G E P V X T N K - D X X S H R Majority																				
		100										110										
78		K	V	E	G	K	P	E	P	T	I	E	W	F	K	D	G	E	P	V	S	T
90		K	A	E	G	R	P	T	P	T	I	E	W	Y	K	G	G	E	R	V	E	T
26		Q	A	E	G	N	P	T	P	T	I	Q	W	F	K	D	G	R	E	L	K	T
52		G	A	K	-	P	S	T	A	K	I	T	W	Y	K	D	G	Q	P	V	I	T
		I X L P X G S L F F L K V X H G K - - K E S D A G X Y W C V Majority																				
		130										140										
106		V	Q	F	K	D	G	A	L	F	F	Y	R	T	M	Q	G	K	-	-	K	
120		M	L	L	F	S	G	S	L	F	F	L	R	I	V	H	G	R	K	S	R	
53		I	M	L	P	A	G	G	L	F	F	L	K	V	I	H	S	R	-	-	R	
81		I	V	L	D	T	G	S	L	F	L	L	K	V	N	S	G	K	N	G	K	
		A K N E X G E A V S R N A S L Q V A V L R D D F R V E P X D Majority																				
		160										170										
134		A	K	N	R	V	G	Q	A	V	S	R	H	A	S	L	Q	I	A	V	L	
149		A	R	N	Y	L	G	E	A	V	S	H	N	A	S	L	E	V	A	I	L	
81		A	K	N	E	F	G	V	A	R	S	R	N	A	T	L	Q	V	A	V	L	
111		A	S	N	E	H	G	E	V	K	S	N	E	G	S	L	K	L	A	M	L	
		V R V A X G E X A V L E C G P P R G X P E P T I S W R K D G Majority																				
		190										200										
164		T	R	V	A	K	G	E	T	A	L	L	E	C	G	P	P	K	G	I	P	
179		V	M	V	A	V	G	E	P	A	V	M	E	C	Q	P	P	R	G	H	P	
111		T	R	V	A	Q	G	E	V	A	L	M	E	C	G	A	P	R	G	S	P	
141		V	Q	A	L	G	G	E	M	A	V	L	E	C	S	P	P	R	G	F	P	

Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

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X P L D D - Q D M X - - - - R I T I V D G G N L X I X X V Majority																															
220 230 240																															
194	V	P	L	D	D	L	K	A	M	S	F	G	A	S	S	R	V	R	I	V	D	G	G	N	L	L	I	S	N	V	D-Robo pep
209	S	P	L	D	D	-	K	D	-	E	-	-	-	-	-	R	I	T	I	R	G	-	G	K	L	M	I	T	Y	T	H-RoboI pep
141	-	-	-	-	-	Q	T	L	N	I	V	G	N	K	R	I	R	I	V	D	G	G	N	L	A	I	Q	E	A	Predicted D-RoboII v2 pep	
171	K	E	L	R	I	-	Q	D	M	P	-	-	-	-	-	R	Y	T	L	H	S	D	G	N	L	I	I	D	P	V	U88183 composite pep
R X S D X G X Y Q C V A X N M V G T R E S X X A X L X V X V Majority																															
250 260 270																															
224	E	P	I	D	E	G	N	Y	K	C	I	A	Q	N	L	V	G	T	R	E	S	S	Y	A	K	L	I	V	Q	V	D-Robo pep
231	R	K	S	D	A	G	K	Y	V	C	V	G	T	N	M	V	G	E	R	E	S	E	V	A	E	L	T	V	L	E	H-RoboI pep
165	R	Q	S	D	D	G	R	Y	Q	C	V	V	K	N	V	V	G	T	R	E	S	A	T	A	F	L	K	V	H	V	Predicted D-RoboII v2 pep
195	D	R	S	D	S	G	T	Y	Q	C	V	A	N	N	M	V	G	E	R	V	S	N	P	A	R	L	S	V	F	E	U88183 composite pep
K P X F X K E P K D Q T V X V G X S A X F X C R V G G D P X Majority																															
280 290 300																															
254	K	P	Y	F	M	K	E	P	K	D	O	V	M	L	Y	G	Q	T	A	T	F	H	C	S	V	G	G	D	P	P	D-Robo pep
261	R	P	S	F	V	K	R	P	S	N	L	A	V	T	V	D	S	A	E	F	K	C	E	A	R	G	D	P	V	H-RoboI pep	
195	R	E	F	L	I	R	G	P	Q	N	Q	T	A	V	V	G	S	S	V	V	F	Q	C	R	I	G	G	D	P	L	Predicted D-RoboII v2 pep
225	K	P	K	F	E	Q	E	P	K	D	M	T	V	D	V	G	A	A	V	L	F	D	C	R	V	T	G	D	E	Q	U88183 composite pep
P X V L W K K X X - - G N M P V S R A - - L H - - - - Y X Majority																															
310 320 330																															
284	P	K	V	L	W	K	K	E	E	-	-	G	N	I	P	V	S	R	A	R	I	L	H	-	-	-	-	-	-	-	D-Robo pep
291	P	T	V	R	W	R	K	D	D	-	-	G	E	L	P	K	S	R	-	-	-	-	-	-	-	-	-	-	Y	E	H-RoboI pep
225	P	D	V	L	W	R	R	T	A	S	G	G	N	M	P	L	R	K	F	S	W	L	H	S	A	S	G	R	V	H	Predicted D-RoboII v2 pep
255	P	Q	I	T	W	K	R	K	N	-	-	E	P	M	P	V	T	R	A	-	-	-	-	-	-	-	-	-	Y	I	U88183 composite pep
X X D D R S L K I X X V T P X D E G E Y V C E A X N X V G X Majority																															
340 350 360																															
305	-	-	D	E	K	S	L	E	I	S	N	I	T	P	T	D	E	G	T	Y	V	C	E	A	H	N	N	V	G	Q	D-Robo pep
309	I	R	D	D	H	T	L	K	I	R	K	V	T	A	G	D	M	G	S	Y	T	C	V	A	E	N	M	V	G	K	H-RoboI pep
255	V	L	E	D	R	S	L	K	L	D	D	V	T	L	E	D	M	G	E	Y	T	C	E	A	D	N	A	V	G	G	Predicted D-RoboII v2 pep
274	A	K	D	N	R	G	L	R	I	E	R	V	Q	P	S	D	E	G	E	Y	V	C	Y	A	R	N	P	A	G	T	U88183 composite pep
I E A S A X L T V Q A P P X F V X K P X D Q X V X L G G T V Majority																															
370 380 390																															
333	T	S	A	R	A	S	L	I	V	H	A	P	P	N	F	T	K	R	P	S	N	K	K	V	G	L	N	G	V	V	D-Robo pep
339	A	E	A	S	A	T	L	T	V	Q	E	P	P	H	F	V	V	K	P	R	D	Q	V	V	A	L	G	R	T	V	H-RoboI pep
285	I	T	A	T	G	I	L	T	V	H	A	P	P	K	F	V	I	R	P	K	N	Q	L	V	E	I	G	D	E	V	Predicted D-RoboII v2 pep
304	L	E	A	S	A	H	L	R	V	Q	A	P	P	S	F	Q	T	K	E	A	D	Q	S	V	P	A	G	G	T	A	U88183 composite pep
T F E C X A X G N P X P A X F W S K E G X S X L L F P S Y X Majority																															
400 410 420																															
363	Q	L	P	C	M	A	S	G	N	T	P	P	S	V	F	W	T	K	E	G	V	S	T	L	M	F	P	N	S	S	D-Robo pep
369	T	F	Q	C	E	A	T	G	N	P	Q	P	A	I	F	W	R	R	E	G	S	Q	N	L	L	F	-	S	Y	Q	H-RoboI pep
315	L	F	E	C	Q	A	N	G	H	P	R	F	T	L	Y	W	S	V	E	G	N	S	S	L	L	L	F	G	Y	R	Predicted D-RoboII v2 pep
334	T	F	E	C	T	L	V	G	Q	P	S	P	A	Y	F	W	S	K	E	G	Q	Q	D	L	L	F	P	S	Y	V	U88183 composite pep

Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

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	X G R X X V X - - V S X T G T L T I T X V R Q E D E G Y Y V Majority																			
	430										440									
393	H	G	R	Q	Y	V	A	-	-	-	A	D	G	T	L	Q	I	T	D	V
398	P	P	Q	S	S	S	R	F	S	V	S	Q	T	G	D	L	T	I	T	N
345	D	G	R	M	E	V	T	L	T	P	E	G	R	S	V	L	S	I	A	R
364	S	A	D	G	R	T	K	-	-	V	S	P	T	G	T	L	T	I	E	E
	- C X A L N V A G S S X S K A X L X V - - - - - Majority										450									
	460										470									
419	-	C	S	A	F	S	V	V	D	S	S	T	V	R	V	F	L	Q	V	-
428	-	C	Q	T	L	N	V	A	G	S	I	I	T	K	A	Y	E	-	-	-
375	T	C	N	A	L	N	A	V	G	S	V	S	S	R	T	V	V	S	V	-
392	-	C	A	G	M	N	S	A	G	S	S	L	S	K	A	A	L	K	A	T
	- - - - - Y L - - - V T D X X X E R Majority										480									
	490										500									
437	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	S	V	D	E
442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	E	V	T	D	V
394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	T	Q	F
421	K	S	K	M	G	K	Q	K	Q	K	N	V	Q	S	I	I	K	Y	L	I
	P P P I I E Q G P V N O T L P V G S X A V L P C R A T G X P Majority										510									
	520										530									
443	P	P	P	I	I	Q	I	G	F	A	N	Q	T	L	P	K	G	S	V	A
453	P	P	P	V	I	R	Q	G	F	V	N	Q	T	V	A	V	D	G	T	F
400	P	P	P	I	I	E	Q	G	P	V	N	Q	T	L	P	V	K	S	I	V
451	P	P	P	T	I	E	H	G	H	Q	N	Q	T	L	M	V	G	S	S	A
	V P X I S W X X D G X P V D X Q D - S R I S Q X X X G S L X Majority										540									
	550										560									
473	S	P	R	I	K	W	F	H	D	G	H	A	V	-	-	Q	A	G	N	R
483	V	P	T	I	L	W	R	K	D	G	V	L	V	S	T	Q	D	-	S	R
430	V	F	Q	V	S	W	Y	L	D	G	I	P	I	D	V	Q	E	H	E	R
481	T	E	G	I	S	W	L	R	D	G	L	E	I	D	I	T	D	-	S	R
	I X D L Q K L X D T G X Y T C I A S N E X G E S S W S A Y L Majority										570									
	580										590									
501	V	D	D	L	Q	-	L	S	D	S	G	T	Y	T	C	T	A	S	G	E
512	I	R	Y	A	-	K	L	G	D	T	G	R	Y	T	C	I	A	S	T	P
460	I	S	D	L	Q	R	H	E	D	E	G	L	Y	T	C	V	A	S	N	R
510	I	A	D	L	-	K	K	P	D	T	G	V	Y	T	C	I	A	K	N	E
	T V E X P G S P - X Q F X R A P D P S T Y P S P P G K P X V Majority										600									
	610										620									
530	T	V	E	K	P	G	S	T	S	L	H	-	-	R	A	A	D	P	S	T
541	E	V	Q	E	F	G	V	P	-	V	Q	P	P	R	P	T	D	E	N	L
490	R	L	D	T	P	T	N	P	N	I	K	E	F	R	A	P	E	L	S	T
539	T	V	E	D	H	T	S	N	-	A	Q	F	V	R	M	P	D	P	S	N

NLXKYTNYEFFXXPF - - - FXSIEGAPSNSK Majority
 880 890 900
 732 NLKKYTKYEFFLTPTFF - - - FETIEGQPSNSK
 740 DLRKGVNYEIKARFP - - - FNEFGADSEIK D-Rabo pep
 749 GLVQYTLYEFFIVPF - - - YKSVGKPSNSK H-RaboI pep
 742 NLMPTNYEFFVIPYHSGVHSIHGAPSNSK Predicted D-RaboII v2 pep
 U88183 composite pep

X A L T L E D V P S A P P X G V X I X M L N - - X T A X X V Majority
 910 920 930
 759 T A L T Y E D V P S A P P D N I O I G M Y N - - Q T A G W V D-Robo pep
 767 F A K T L E E A F S A P P Q G V T V S K N D G N G T A I L V H-RoboI pep
 776 I A R T L E D V P S E A P Y G M E A L L L N - - S S A V F L Predicted D-RoboII v2 pep
 772 D V L T A E A P P S L P P E D V R I R M L N L - - T T L R I U88183 composite pep

S W K A P P X D X X N G X L X G Y K V X V X G X X T X X N - Majority
 940 950 960
 787 F W T P P P S Q H H N G N L Y G Y K I E V S A G N T M - - D-Robo pep
 797 S W Q P P P E D T Q N G M V Q E Y K V W C L G N E T R Y H - H-RoboI pep
 804 K W K A P E L K D R H G V L L N Y H V I V R G I D T A H N F Predicted D-RoboII v2 pep
 800 S W K A P K A D G I N G I L K G F Q I V I V G Q A P N N N - U88183 composite pep

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-- - L X N X T X D A X T X S V V L X N L V T G X X Y S V R Majority
      970                               980                               990
814 - K V L A N M T L N A T T T S V L L N N L T T G A V Y S V R D-Robo pep
826 - - - I N K T V D G S T F S V V I P F L V P G I R Y S V E H-RoboI pep
834 S R I L T N V T I D A A S P T L V L A N L T E G V M Y T V G Predicted D-RoboII v2 pep
829 - - - R N I T T N E R A A S V T L F H L V T G M T Y K I R U88183 composite pep

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	V A A X T N A G V G V Y S X P X X L X L D P - T - - - P X Majority																														
	1000										1010										1020										
843	L	N	S	F	T	K	A	G	D	G	P	Y	S	K	P	I	S	L	F	M	D	P	-	T	H	H	V	H	P	P	D-Robo pep
852	V	A	A	S	T	G	A	G	S	G	V	K	S	E	P	Q	F	I	Q	L	D	-	-	-	-	-	-	-	-	A	H-RoboI pep
864	V	A	A	G	N	N	A	G	V	G	P	Y	C	V	P	A	T	L	R	L	D	P	I	T	K	R	L	D	P	-	Predicted D-RoboII v2 pep
855	V	A	A	R	S	N	G	G	V	G	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	U88183 composite pep

H G X P X X X X D Q X X L X Q X L X X X N X X X X F X X G I Majority
1030 1040 1050

872 R A H P S G T H D G R H E G Q D L T Y H N N G N I P P G D I D-Robo pep
874 H G N P V S P E D Q V S L A O Q I S D V V K Q P A F I A G I H-RoboI pep
893 - - - - - - - - - - - - - F I N Q - - - - - Predicted D-RoboII v2 pep
867 H G T S E V I M N Q D T L E K H L A A Q Q E N E S F L Y G L U88183 composite pep

Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

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XXXXXXXXH--VXD XVXXPWL-----XIL Majority
              1060              1070              1080
902 NPTTHKKTTHBYLSGFWL-----MVL D-Robo pep
904 GAACW--IILMVFSIWL-----MVL H-RoboI pep
897 ---RDHVNVDVLTQPF-----IIL Predicted D-RoboII v2 pep
897 INKS--VPVIIV-----AILI U88183 composite pep

XXXXXXXXILXVLXXSFX-XMVYXKRKHXM SKGX Majority
              1090              1100              1110
922 VCI VILVLVISAAISMVYFKRKHOMTKE-- D-Robo pep
932 YAGIRKVPSFTFTPTVTYQRGGEAVSSGGR H-RoboI pep
913 LGAILAVLMLSFG-AMVVFVKRKHMMMKOSA Predicted D-RoboII v2 pep
914 FVVI--IIAYCY-----WRNSRNSDGD KD U88183 composite pep

LGLXLXINXXSXXXXXXXXLWXNXGNXXW--X Majority
              1120              1130              1140
950 LGHL SVVSDNEI---TALNINSKESLW--I D-Robo pep
962 PGLLNISEPAAQPWLADTWPN TGN NHND CS H-RoboI pep
942 LNTMRGNHTSDVLKMPSSLSARNNGNGYW--L Predicted D-RoboII v2 pep
935 RSFIKINDGSVHMASNNLWDVAQNPNQNP M U88183 composite pep

DSXXGXMXWNXXGXGXXYSLSLXXDXIAXYNN Majority
              1150              1160              1170
975 DHHRG---WRTADTDKDSGLSESKL--- D-Robo pep
992 ISCCTAGNGNSDSNLTTYSRPA DCIANYNN H-RoboI pep
970 DSSTGGMVWRPSPGGDSLEMQKDHIADYAP Predicted D-RoboII v2 pep
965 YNTAGRM TMNNRNGQALYSLT PNAQDF FNN U88183 composite pep

XXDXXGSXXXXGX SX-YGGXDLAGXXXXNXM Majority
              1180              1190              1200
997 LSHVNS SQSNYNNSD--GGTDYAEVDTRNL D-Robo pep
1022 QLDNKQTNLMLPESTVYGDVDLSNKI-NEM H-RoboI pep
1000 VCGAPGSPAGG GTS--GGSGGAGSGASGG Predicted D-RoboII v2 pep
995 CD DYS GTMHRPGESEHHYHYAQLTG GP G NAM U88183 composite pep

XTFYGXX--D---XSXXNPTPYATT-L-X Majority
              1210              1220              1230
1025 TTFYNCR-----KSPDMPPTPYATT--M D-Robo pep
1051 KTFNSPNLK DGRFVNPSGQPTPYATTQLIQ H-RoboI pep
1028 DDIHG GH-----GSE RNQQRVVG E--Y Predicted D-RoboII v2 pep
1025 STFYGNQYHD-----DPSPYATT TLVL U88183 composite pep

SNIXTXXXEXSX--KXP-W-SXXXXKXXXXX Majority
              1240              1250              1260
1045 I-IGTSSSEETCT--KTT--SISADKDSGT D-Robo pep
1081 SNLSNNMNNNGSGDSGEKH WKPLGQQKQEVA H-RoboI pep
1048 SNIP TDYAEVS SFGKAF--SEYGRHGNAS Predicted D-RoboII v2 pep
1047 SN-----QQPAW----- U88183 composite pep

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Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

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P X P Y X - - - - L - - D A X X X X P V P P X P P X X X Majority
      1270          1280          1290
1069 H S P Y S - - - - - D A - F A G Q V F A V P V V K S D-Robo pep
1111 P V Q Y N I V E Q N K L N K D Y R A N D T V P P T I E Y N Q H-RoboI pep
1075 P A P Y A - - - - - T S S I L S P H Q Q Q Q Q Q Q P Predicted D-RoboII v2 pep
1054 - - - - - L N D K M I R A P A M P T N P V P P E P P - - A U88183 composite pep

R Y X Q X T X G X Y X X S X R - S - - - G - - - - Majority
      1300          1310          1320
1089 N Y L Q - - - - - Y P V E P - - - - - D-Robo pep
1141 S Y D Q N T G G S Y N S S D R G S S T S G S Q G H K K G A R H-RoboI pep
1096 R Y Q Q R P V P G Y G L Q R - - - - - Predicted D-RoboII v2 pep
1076 R Y A D H T A G R R S R S S R A S D G R G T L - - - - U88183 composite pep

- - - - - G G X N W X X X L P P P P X H P P P X S T X X Majority
      1330          1340          1350
1098 - - - - - I N W S E F L P P P P E H P P P S S T Y G D-Robo pep
1171 T P K V P K Q G G M N W A D L L P P P P A H P P P H S N S E H-RoboI pep
1110 - - - - - P M H P H Y Q Q Q Q H Q Q Q Q A Q Q T H Q Predicted D-RoboII v2 pep
1099 - - - - - N G G L H - - - - - U88183 composite pep

- - - - - Y X Q X X P - - - - - Majority
      1360          1370          1380
1119 - - - - - Y A Q G S P - - - - - D-Robo pep
1201 E Y N I S V D E S Y D Q E M P C P V P P A R M Y L Q Q D E L H-RoboI pep
1131 - - - - - Q H Q A L Q - - - - - Predicted D-RoboII v2 pep
1104 - - - - - - - - - - - - - - - U88183 composite pep

- - - E X X R X S X S X X R S X X S T X X X V S Y X X X H S Majority
      1390          1400          1410
1125 - - - E S S R K S S K S A G S G I S T N Q S I L N A S I H S D-Robo pep
1231 E E E E D E R G P T P P V R G A A S S P A A V S Y S H Q S T H-RoboI pep
1137 - - - Q H Q Q L P P S N I Y Q Q M S T T S E I Y P T N T - G Predicted D-RoboII v2 pep
1104 - - - - H R T S G S Q - R S D S P P H T D V S Y V Q L H S U88183 composite pep

S S X T G S S X E X - - P Q Y X - - C P X E T G X X X H X P Majority
      1420          1430          1440
1152 S S S G G F S A W G V S P Q Y A V A C P P E N V Y S N P L S D-Robo pep
1261 A T L T P S P Q E E L Q F M L Q - D C P E E T G H M Q H Q P H-RoboI pep
1163 P S R S V Y S E - - - - Q Y Y - - Y P K D K Q R H I H I T Predicted D-RoboII v2 pep
1128 S D G T G S S K E R - - - - - T G E R R T P P U88183 composite pep

X X X L - - - - P P P P - - P - - P P X X H X Y X X A P - - Majority
      1450          1460          1470
1182 A V A G - - - - - G T Q N R Y Q I T P - - D-Robo pep
1290 D R R R Q P V S P P P P P R P I S P P H T Y G Y I S G F L V H-RoboI pep
1186 E N K L - - - - - S N C H T Y E A A P - - Predicted D-RoboII v2 pep
1146 N K T L M D F I P P P P S N F - P P P G G H V Y D T A - - U88183 composite pep

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Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

	1480	1490	1500	
1196	XXXXXXXXXXXXFAXTRRQLLR			Majority
1320	SDMDTDAPEE	EEDEADMEVAKMQ	TRRLLLLR	D-Robo pep
1200	GAKESSPIS	QFA	SVRRQLLR	H-RoboI pep
1172	TRRQLNR			Predicted D-RoboII v2 pep
	U88183 composite pep			
	G---XPXXSVG-----S-PE			Majority
	1510	1520	1530	
1211	GLEQTTPASS	SVG	DLESSVTGSMINGWG	PN
1350	PNCSIG		ASE	D-Robo pep
1220			RE	H-RoboI pep
1179			STPR	Predicted D-RoboII v2 pep
	U88183 composite pep			
	EDXFXSXRXXXSXSDGXLR-----			Majority
	1540	1550	1560	
1220	HLPFATQRHAAS	SEYQAGL		D-Robo pep
1380	EDNIS	SGRSS	SSDGS	H-RoboI pep
1229	SARFKVLNTDQ	GKNOQL		Predicted D-RoboII v2 pep
1184	EDTYDS	SV	SDGAF	U88183 composite pep
	-----XAA-----XCXX			Majority
	1570	1580	1590	
1238		NAA	RC	CAQ
1410	AAEYAGLKVARRQM	QDAAGRRHFHAS	QC	PR
1248		DLDGSS		MCYN
1196				Predicted D-RoboII v2 pep
	U88183 composite pep			
	XXAXXS CD--XSPSPMQ-----			Majority
	1600	1610	1620	
1245	SRACNS	CDALAT	FSPMQ	D-Robo pep
1440	PTSPV	STDSNM	SAAVMQ	KTRPAKKLKHQPG
1258	GLADSG	CG	GSPSEMA	
1196				Predicted D-RoboII v2 pep
	U88183 composite pep			
	-----XPPFXXXPXAXYXPXXXXXX			Majority
	1630	1640	1650	
1262		PPPP	VVPV	PEGWYQP
1470	HLLRRE	TYTDDL	PPPP	VVPV
1273		MLMS	HEDE	HALYHTADGDLD
1196				Predicted D-RoboII v2 pep
	U88183 composite pep			
	DMEXRP-----XXYXXXDE-TDRSRXX-G-----			Majority
	1660	1670	1680	
1282	PMHPTSS	NNHQI	YQCSSE	ECSDHSS
1500	OLEFV	RRVV	VVKLP	SPMDARTDRS
1293	DME		RLV	VKVDE
1199	DVNARE			TSRNRNLG
				GRPL
				D-Robo pep
				H-RoboI pep
				Predicted D-RoboII v2 pep
				U88183 composite pep

Alignment Report of Untitled, using Clustal method with PAM250 residue weight table.

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		K G - - - - D S X Q X Q L Q L X X X G X S X E A X G X X X X																				Majority	
		1690										1700										1710	
1307		- - - - - Q S H K R Q L Q L E E H G S S A K Q R G G H H R																				D-Robo pep	
1530		K G R E V L D G R Q V V D M R T N P G D P R E A Q E Q Q N D																				H-RoboI pep	
1305		- - - - - Q P P Q Q Q Q L I P L V P Q H P A E G H L Q S																				Predicted D-RoboII v2 pep	
1217		K G K R D D D S Q R S S L M M D D D G G S S E A D G E N S E																				U88183 composite pep	
		G R X X X X X X X X D - P X X E X X L X E X X X L X Y - -																				Majority	
		1720										1730										1740	
1331		R R A P V V Q P C M E S - - E N E N M L A E Y E Q R Q Y - -																				D-Robo pep	
1560		G K G R G N K A A K R D L P P A K T H L I Q E D I L P Y C R																				H-RoboI pep	
1329		W R N Q S T R S S R K N - - G Q E C I - K E P S E L I Y - -																				Predicted D-RoboII v2 pep	
1247		G - - - - - - - - - - D V P R G G V R - - - - -																				U88183 composite pep	
		- - - - - - - P R D X X S S S R X X X X C S G S X G X X L																				Majority	
		1750										1760										1770	
1357		- - - - - - - T S D C C N S S R E G D T C S C S E G S C L																				D-Robo pep	
1590		P T F P T S N N P R D P S S S S S M S S R G S G S R Q R E Q																				H-RoboI pep	
1354		- - - - - - - A P G S V A S E R S - - - - - - - - - - L																				Predicted D-RoboII v2 pep	
1256		- - - - - K A V P R M G I S A S T L A H S C Y G T N G T A Q																				U88183 composite pep	
		X X - - - - - - - - - - - E S G E X N N X Q X T X X																				Majority	
		1780										1790										1800	
1379		Y A - - - - - - - - - - - E A G E P A P R Q M T A K																				D-Robo pep	
1620		A N V G R R N I A E M Q V L G G Y E R G E D N N E E L E E T																				H-RoboI pep	
1365		L S - - - - - - - - - - - N S G S G T S S Q P A G H																				Predicted D-RoboII v2 pep	
1281		R - - - - - - - - - - - F R S I P R N N G I V T Q E																				U88183 composite pep	
N T																						Majority	
1394		N T																				D-Robo pep	
1650		E S																				H-RoboI pep	
1380		N V																				Predicted D-RoboII v2 pep	
1296		Q T																				U88183 composite pep	

Decoration 'Decoration #1': Shade (with solid black) residues that match the Consensus exactly.